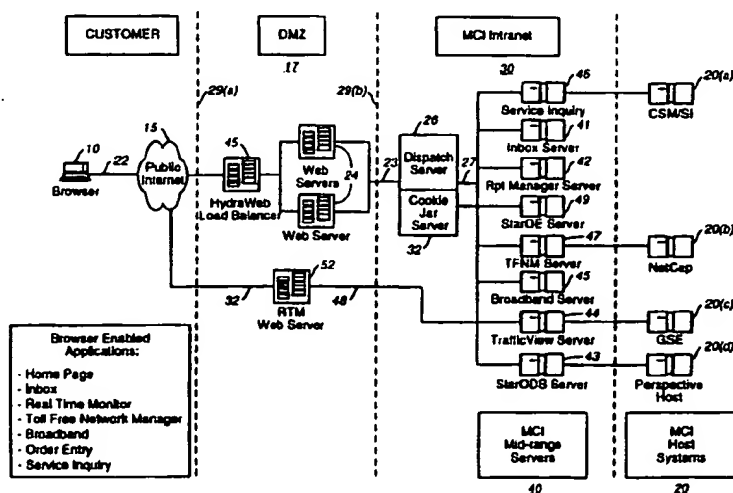




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : <b>H01J 13/00</b>	<b>A3</b>	(11) International Publication Number: <b>WO 99/16099</b> (43) International Publication Date: 1 April 1999 (01.04.99)
<p>(21) International Application Number: PCT/US98/20158</p> <p>(22) International Filing Date: 25 September 1998 (25.09.98)</p> <p>(30) Priority Data: 60/060,655 26 September 1997 (26.09.97) US</p> <p>(71)(72) Applicants and Inventors: DEVINE, Carol, Y. [US/US]; 395 Palm Springs Drive, Colorado Springs, CO 80921 (US). SHIFRIN, Gerald, A. [US/US]; 18910 Cypress Pt., Monument, CO 80132 (US). SHOULBERG, Richard, W. [US/US]; 306 Clarksley Road, Manitou Springs, CO 80829 (US).</p> <p>(74) Agents: GROLZ, Edward, W. et al.; Scully, Scott, Murphy &amp; Presser, 400 Garden City Plaza, Garden City, NY 11530 (US).</p>		<p>(81) Designated States: AU, BR, CA, JP, MX, SG, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).</p> <p>Published <i>With international search report.</i></p> <p>(88) Date of publication of the international search report: 20 May 1999 (20.05.99)</p>

## (54) Title: SECURE CUSTOMER INTERFACE FOR WEB-BASED DATA MANAGEMENT



## (57) Abstract

An integrated series of security protocols is disclosed that protect remote user communications (22) with remote enterprise services, and simultaneously protect the enterprises services from third parties. In the first layer, an implementation of the Secure Sockets Layer (SSL) version of a HTTPS provides communications security, including authentication of the enterprise web server and the security of the transmitted data. The protocols provide for an identification of the user, and an authentication of the user to ensure the user is who he/she claims to be and a determination of entitlements that the user may avail themselves of within the enterprise system. Session security is described, particularly as to the differences between a remote user's copper wire connection to a legacy system and a user's remote connection to the enterprise system over a "stateless" public Internet (15), where each session is a single transmission, rather than an interval of time between logon and logoff, as is customary in legacy systems. Security for the enterprise network and security for the data maintained by the various enterprise applications is also described.

**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	RS	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NB	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon		Republic of Korea	PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakhstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

## INTERNATIONAL SEARCH REPORT

 International application No.  
 PCT/US98/20158

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : H01J 13/00

US CL : 395/200.59

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 395/200.59; 395/187.01; 395/609; 395/200.79; 395/200.32; 395/200.12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

INTERNET, APS

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	TAMEMBAI,, ANDREW S., Computer Networks, Prentice Hall, 1996, p. 410-412.	1-36
Y	WO 97/16911, A (GORE), 09 May 1997 (09.05.97) p. 2 ll. 4-40.	1-36
Y,P	US 5,802,320 A (BAEHR et al) 01 SEPTEMBER 1998 (01.09.98) fig 6, fig 9.	1-36
Y,P	US 5,805,803, A (BIRRELL et al) 08 SEPTEMBER 1998 (08.09.98), fig. 1.	1-36
Y,P	US 5,826,029, A (GORE et al), 20 OCTOBER 1998 (20.10.98) fig. 4A.	1-36
Y,P	US 5,793,964 A (ROGERS et al.) 11 AUGUST 1998 (11.08.98) fig. 11.	1-36

☒ Further documents are listed in the continuation of Box C.
 ☐ See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
*A* document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
*B* earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*A* document member of the same patent family
*O* document referring to an oral disclosure, use, exhibition or other means	
*P* document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

02 DECEMBER 1998

Date of mailing of the international search report

12 MAR 1999

 Name and mailing address of the ISA/US  
 Commissioner of Patents and Trademarks  
 Box PCT  
 Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

GLENTON BURGESS

Telephone No. (703) 305-4792

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/20158

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y,P	US 5,708,780 A (LEVERGOOD et al.) 13 JANUARY 1998 (13.01.98), fig. 3.	1-36
Y,P	US 5,815,665 A (TEPER et al.) 29 SEPTEMBER 1998 (29.09.98) fig. 1.	1-36